permaFloat®
1961 Industrial Blvd., Conyers, GA 30012
(888) 985-3626 Fax (770) 860-1725
Division of Cellofoam® North America Inc
http://www.cellofoam.com

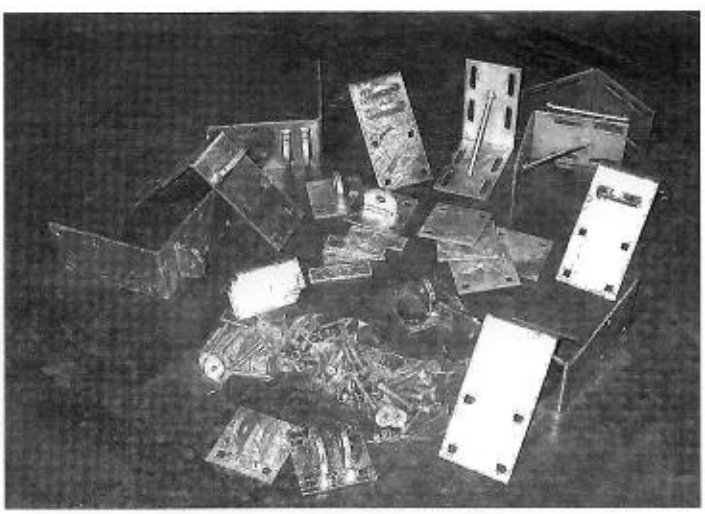
HOW TO BUILD A WOOD FLOATING DOCK

STEP BY STEP INSTRUCTIONS USING PERMAFLOAT® HARDWARE, FLOATS, RUBRAIL, AND ACCESSORIES

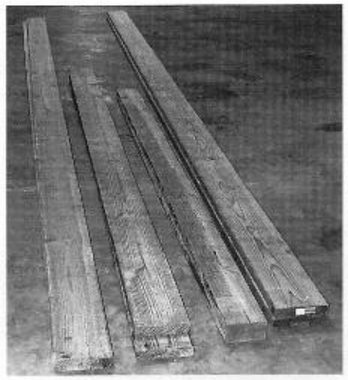
A 6' X 20' DOCK WITH A 4' X 10' RAMP ARE SHOWN, BUT THE SAME PROCEDURE APPLIES TO ANY SIZE WOOD DOCK

Tools Needed:

Many wood docks have been totally built with hand tools but it sure makes it easier with power tools. The least you need is a square, chalk line, pencil, hammer, tape measure, 2 C-clamps, power saw, pliers, 1/2" drill bit (if using 1/4" hardware), 3/8" drill bit (for homeowners hardware and cleat bolts), 1/4" drill bit for float drums, 3/4" socket and wrench, 9/16" open end wrench, power drill. If you have access to air wrenches it is helpful, especially on big jobs.

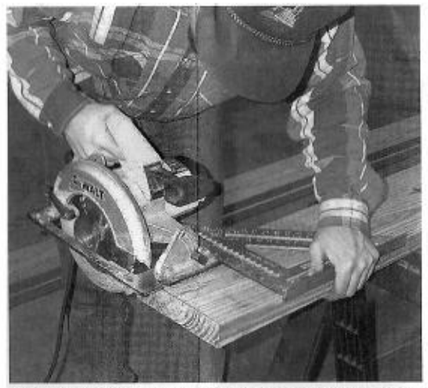


1. Assemble together all the hardware you need for the project. There is nothing more frustrating than missing one piece of hardware while building. Depending on the size of the project, you will have lots of hardware. If you use the hardware as designed, the dock will last 30 or more years. If you have questions as to what hardware you need, give us a call!

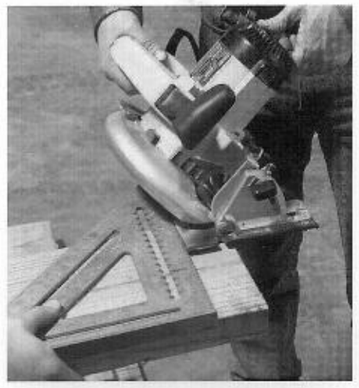


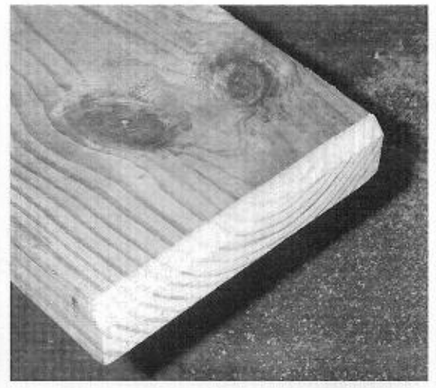
2. Like hardware, assemble together all the wood you need for your project. We recommend at least 2" x 8" x length pressure treated lumber. Be selective on your lumber. Lumber that is dried out, bent or warped will make your project much harder.

3. Select your floats needed. We manufacture Permafloats they are the best both in the shell polyethylene and polystyrene foam filling. Many float manufacturers claim they are the best. If they sell seconds, they aren't! We sell over 30 different sizes of floats. Remember, a float could be in the water and expected to function for the next 30 years. It should also meet or exceed Corps. of Engineers Regulation #36 CFR Part 327.



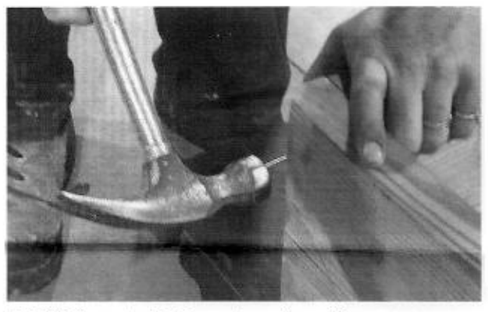
4. Getting Started. Cut one end of the outside side stringers square. Measure and cut the other end to length. This will be the length of the dock.



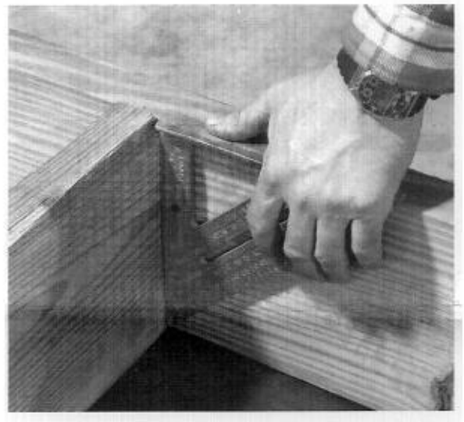


5. On the side stringers only, set your saw at 45° and cut in 1/2" from the end a 45° cut. This is to allow the radius of the hardware to fit.

6. Cut the end stringer to length. If you are using 1 1/2" thick pressure treated lumber, they would be 1 1/2" + 1 1/2" = 3" shorter than the width of the dock. (The long side stringer goes full length and the end stringers are inside.)

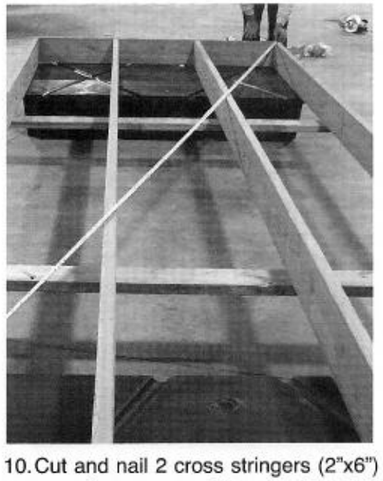


7. Nail the outside frame together. (You can use your floats as a bench.) We use a couple of hot-dipped galvanized nails to hold the frame together. Put nails so the hardware covers them up. This method just makes it easier to hold together while attaching hardware. A nail gun even makes it easier. You will be building the frame right side up so make sure the top of the frame is level (decking will not fit level if they are not).

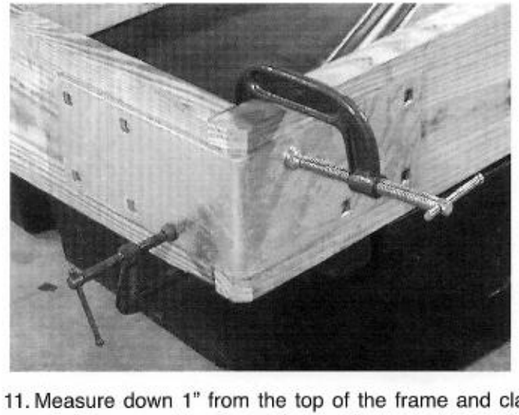


8. Cut the inside stringers to length (They will also be 3" shorter than the sides stringers). Using a square, nail these in place. We normally put these inside stringers on 2' centers.

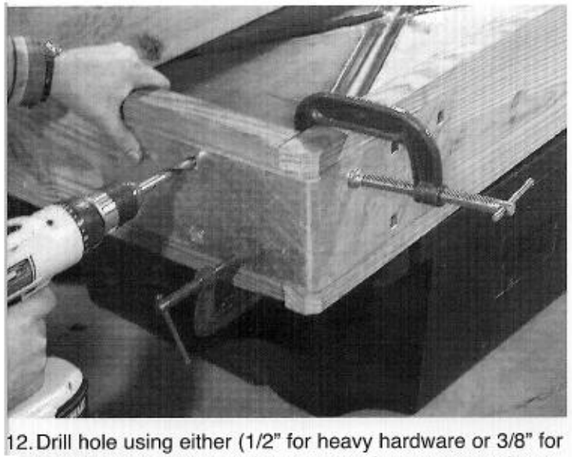
9. Your frame should look like this.



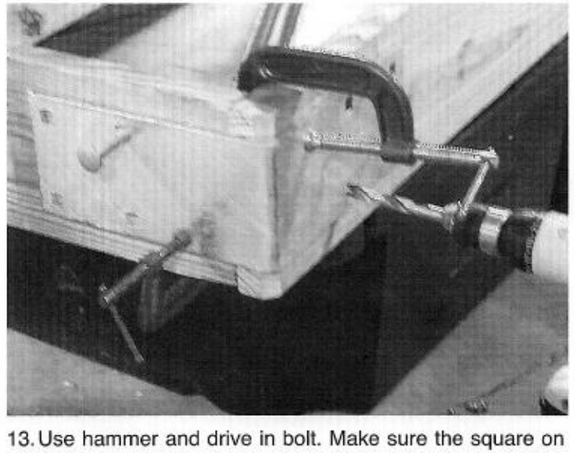
10. Cut and nail 2 cross stringers (2"x6") to the bottom. Make sure these cross stringers do not interfere with the float drum placement. These would be the same width of the dock. When you nail these in place make sure you maintain the 2' centers. Use your tape measure and square by measuring from corner to corner.



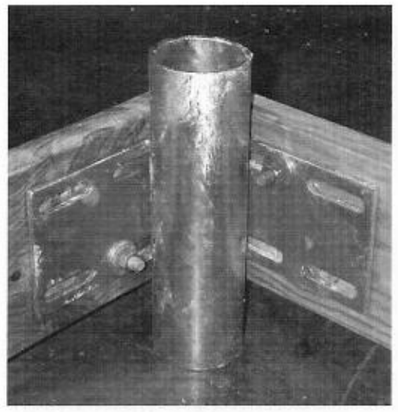
11. Measure down 1" from the top of the frame and clamp outside corner in place. Use 1 clamp on top and one clamp on bottom as shown. Make sure hardware is tight against wood.

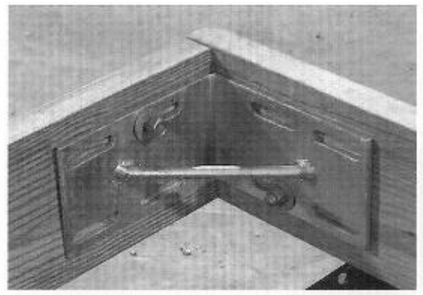


12. Drill hole using either (1/2" for heavy hardware or 3/8" for homeowner's hardware) nearest to the corner as shown. (Regular steel bits work better than wood bits and last longer.)

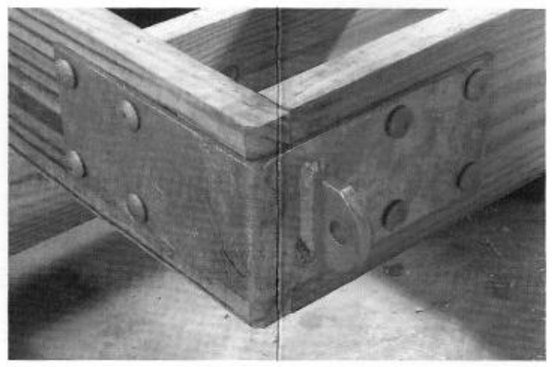


13. Use hammer and drive in bolt. Make sure the square on the carriage bolt goes in the square of the hardware. If it doesn't, use your pliers and turn the head. Drill the opposite inside hole and put in bolt.

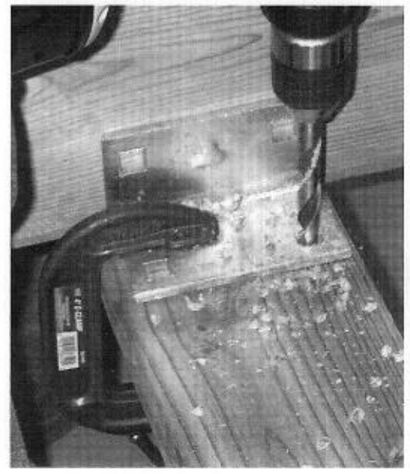


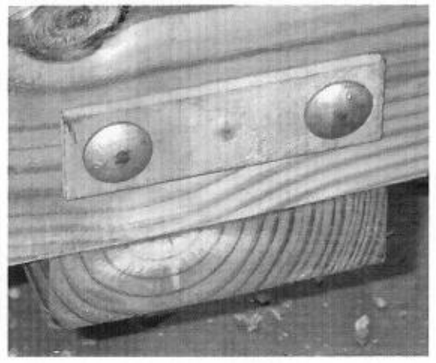


14. Take off clamps. The two bolts and hardware will hold the corner together. Place the inside corner and bolt - use a washer and nut. Snug up but do not fully tighten hardware until later. (If you tighten hardware it could warp the lumber and make decking very hard to attach. A straight-sided dock will not be achieved.)

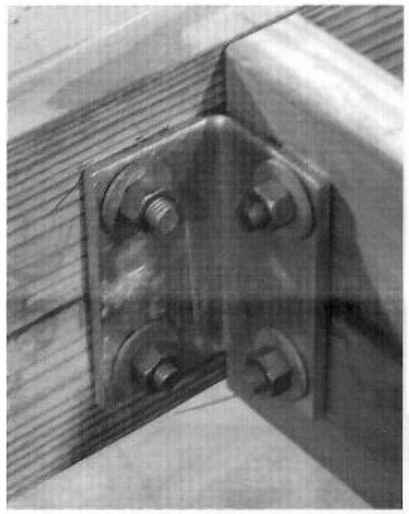


15. Attach male or female tabs to connect docks together as needed.

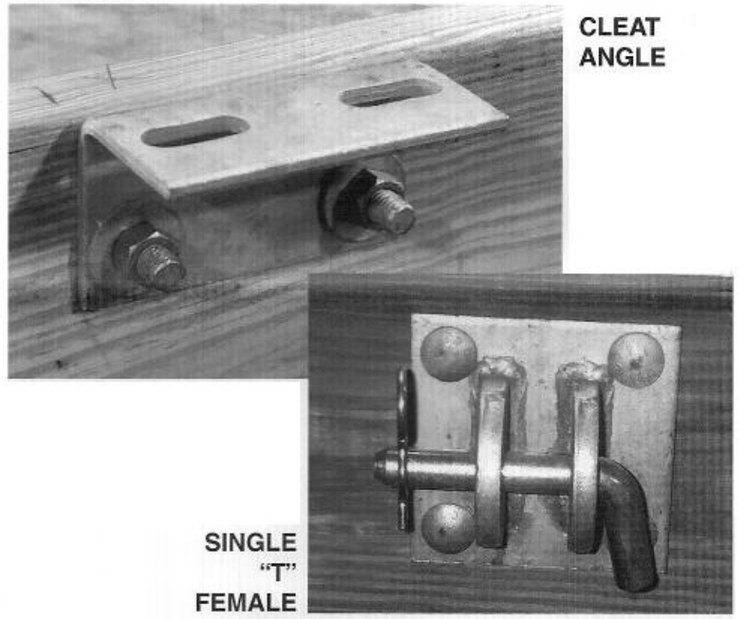


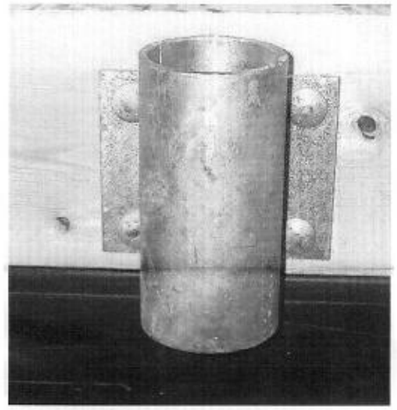


16. Clamp angle, drill and attach bottom cross stringers with angles and washer plates . DO NOT TIGHTEN UNTIL LATER.

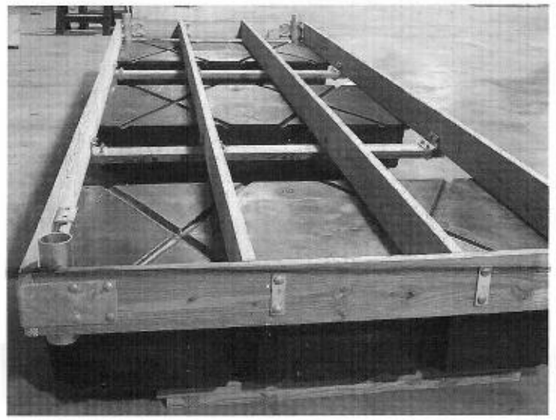


17. Attach inside stringers with angles and washer plates. Do not tighten.

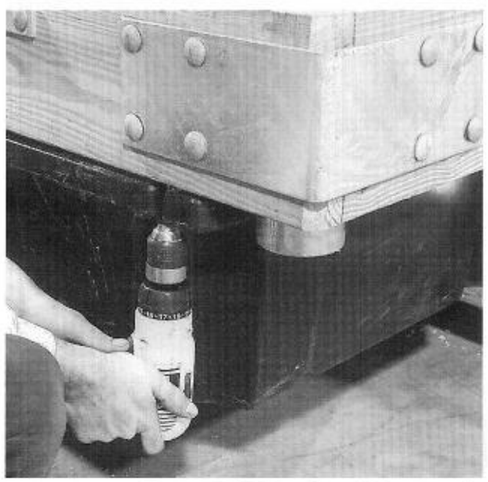




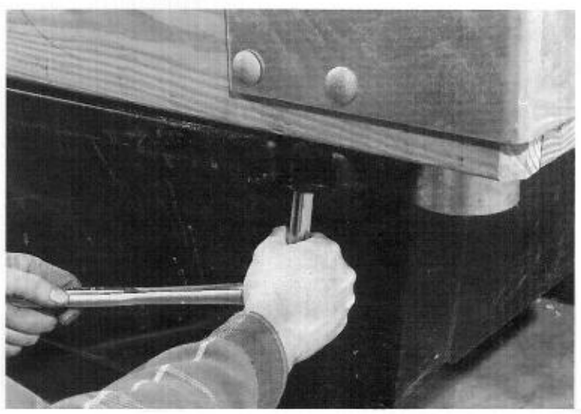
18. Attach any accessories such as pipe holder, cleat angles or chain retainers. Also attach any male or female single "T" if you are adding fingers to your dock. If you are adding fingers to the end of your dock we have hardware with tabs on both sides of the hardware.



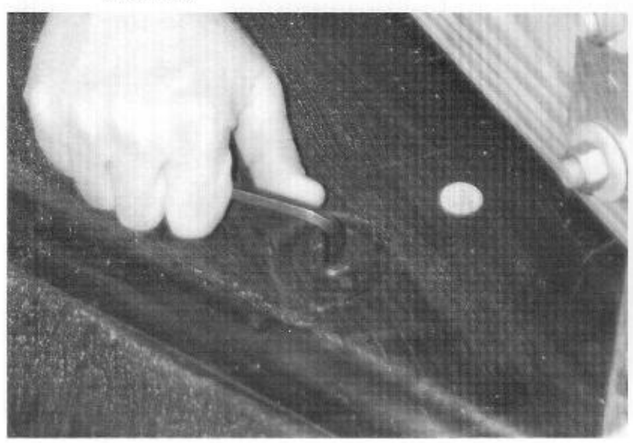
19. All hardware is now on. Do not fully tighten at this point.



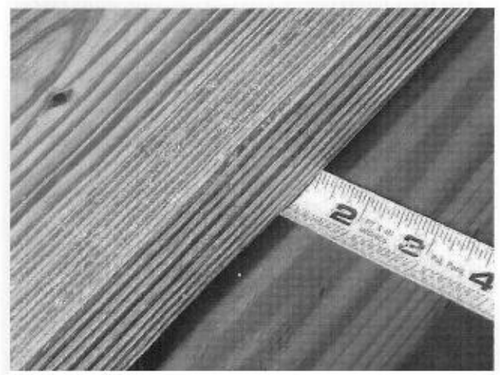
20. Set float drums in the right location. Make sure they are square and flush to the side stringers. Use a 1/4" drill and drill side stringers for lag bolts.



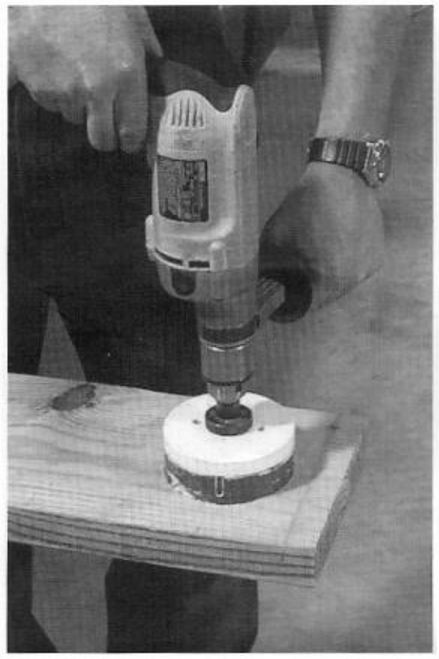
21. Attach floats with a 3/8" x 3" or larger lag bolt. Use a 3/8" washer and a 1/2" washer for a larger bearing surface on the float drum. These, as well as all other fasteners should be hot dipped galvanized.



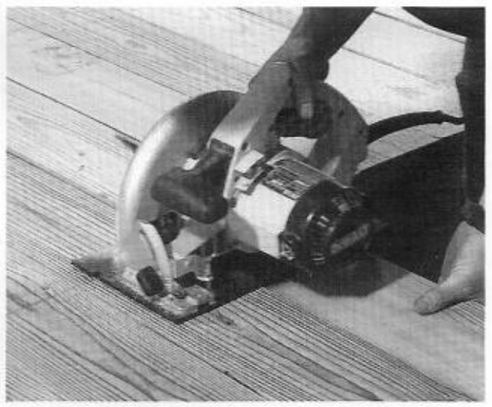
22. Just before decking, place the plastic plug in float drum. (After the decking is on, the floats, especially in the water will remain at a more constant temperature and will not swell up. Never put the plug on before attaching to the frame.)



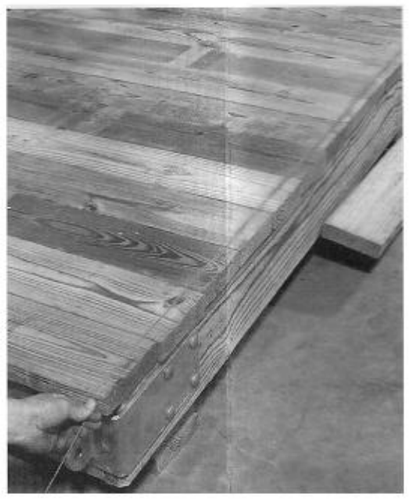
23. Start Decking. Start with the end board on both ends of the dock and temporarily fasten down with a couple of deck screws. If it is an end board at the end of a finger or end of a dock it should be flush with the end stringer. If it is a section that two sections are going to be pinned together, hang those boards over 1 1/4". This will make the gap between the two docks smaller. Although wood decking is still the most commonly used, there are a lot of vinyl and plastics such as our M-Deck. Make sure if you use vinyl or plastic, what stringer centers the manufacturer recommends. Some of them will only span 16".



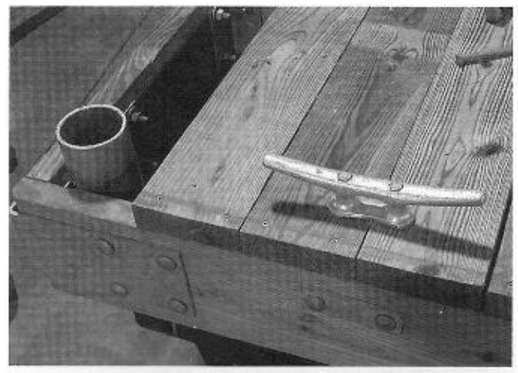
24. If you are using an internal pipe holder, cut out the opening for this hardware.



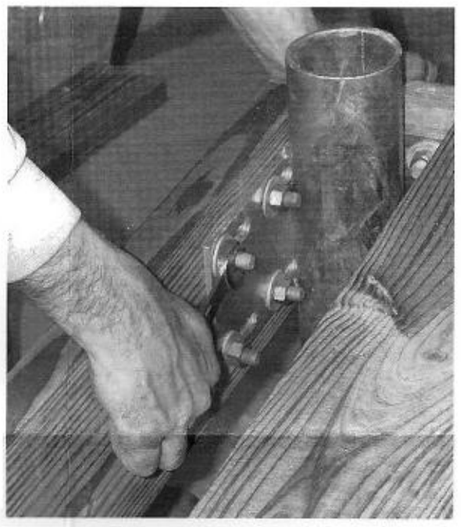
25. Decking can be done two ways: 1. Lay down boards even with the edge of the side stringer and let excess hang over the other side or 2. Cut boards all to the correct length. (If you use method 1, screw boards down, then using a chalk line, cut all deck boards off to length.



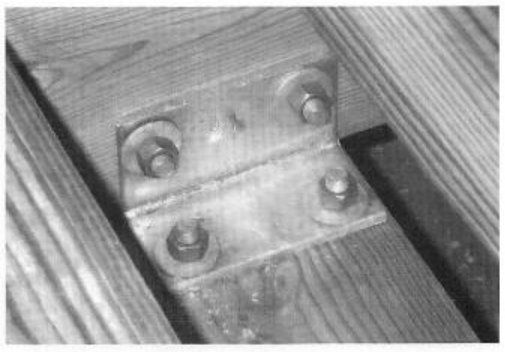
26. Use a chalk line to determine where deck screws are to go - using 2" x 6" decking, use two deck screws for each stringer. If you are using wet pressure treated wood you can hold decking close together. In a few weeks this wood will dry out and you will have a nice space between boards. If you use plastic or vinyl decking, you will have to space between boards. (Do not fasten down boards where you have to tighten down hardware.)



27. Attach cleats - drill down through decking into cleat angles with 3/8" drill. Drive 3/8" bolts, place on washer, nut and tighten.

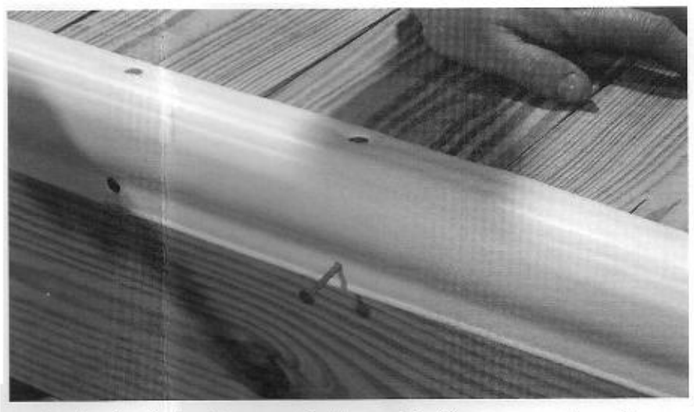


28. Now that decking is fastened down tighten all hardware and screw down those loose deck boards.



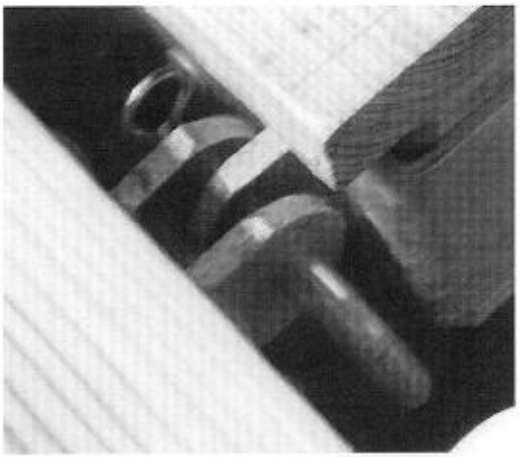
29. Don't forget to tighten down those bottom cross stringer bolts.

30. Nail down outside corner bumpers with stainless ring shank large head nails. Four nails on top and four nails on the bottom.

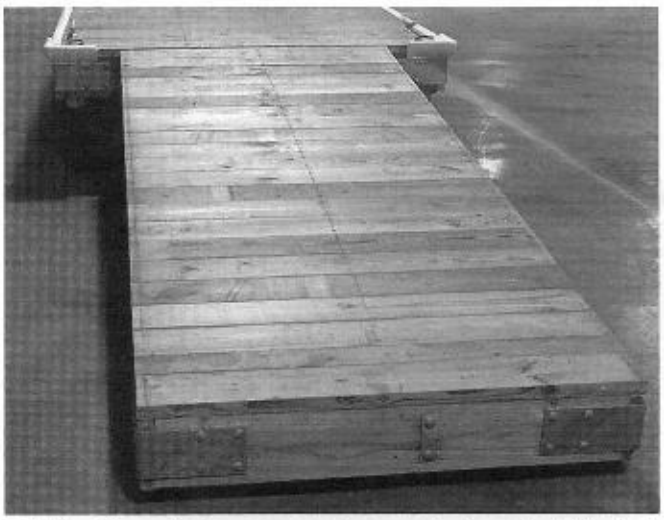


31. Attach rubrail using the same stainless nails. We recommend a nail every 6" top and bottom.

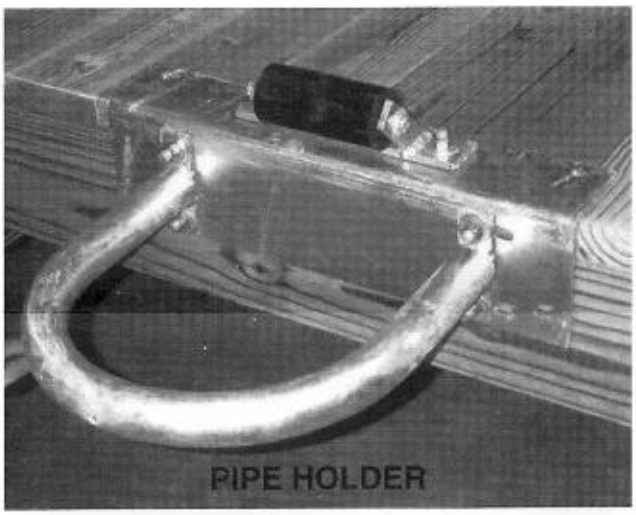
32. This is a picture of a finished corner with an internal 3" pipe guide.



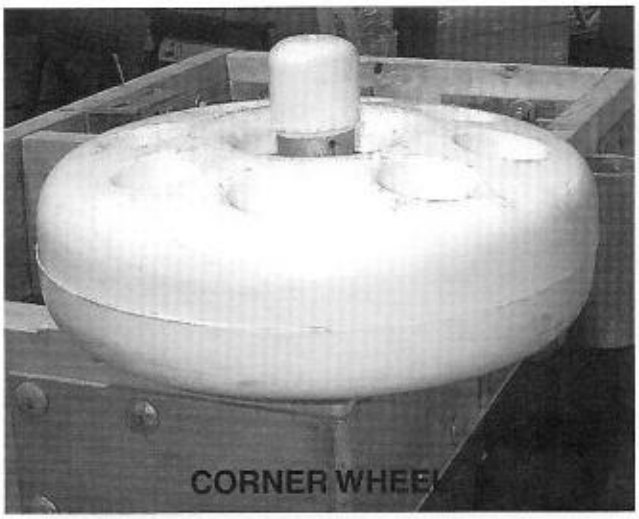
33. Fit the sections together and put in the pins to hold together. This is a little work but will be worth it when you put the dock in the water and it doesn't fit together. If you want to skip this, at least put pins in hardware to make sure they fit. Sometimes there is excess galvanizing which needs to be cleaned out.

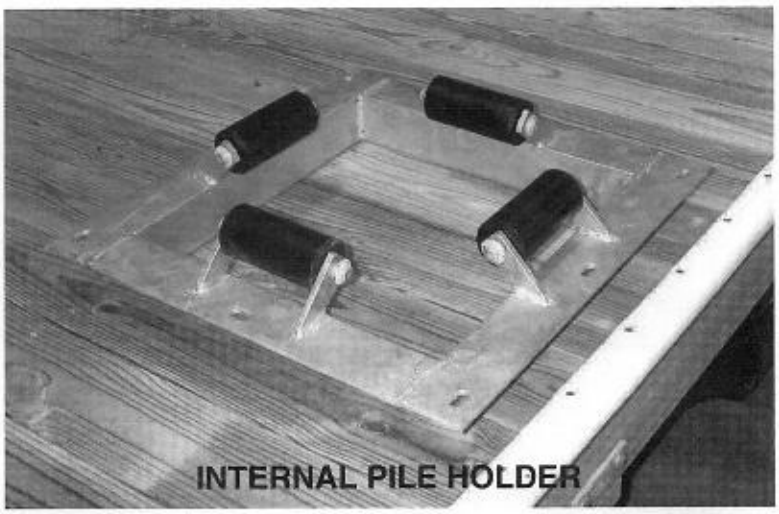


34. Finally, a dock you can be proud of and will last at least 30 or more years.



35. There are other accessories that might be added such as hoops, corner wheels, electrical, internal pile holders, etc. Some of these need prior planning or you might need to take up a deck board to bolt down.





Copyright protected
All rights reserved.